

REMARKS

This Amendment is filed in response to the Office Action mailed November 7, 2007. All objections and rejections are respectfully traversed.

Claims 1-78 are in the case.

Claims 70-78 have been added.

Claims 1, 11, 21, and 50 have been amended.

Request for Interview

The undersigned respectfully requests a telephonic interview with the Examiner after the Examiner has had an opportunity to consider this Amendment, but before the issuance of the next Office Action. The undersigned may be reached at 617-951-2500.

35 U.S.C. § 102

At page 2 of the Office Action, claims 1-69 were rejected under 35 U.S.C. § 102(e) as being unpatentable in view of Federwisch U.S. Patent No. 6,889,228 issued on May 3, 2005 (hereinafter “Federwisch”).

Applicant’s claimed novel invention, as set forth in representative claim 30, comprises in part:

30. A method for propagating soft locks through a cascaded chain of storage systems comprising at least a downstream storage system and an upstream storage system, comprising:

identifying a set of persistent consistency point images on the upstream storage system that require a soft lock to be set;

creating soft locks for the identified set of persistent consistency point images;
sending the created soft locks to the upstream storage system;
and
performing an asynchronous mirroring process to mirror local data to the downstream storage system.

Federwisch discloses using existing upstream snapshots to determine what blocks need to be transferred to submirrors (downstream mirrors) in order to update mirrored volumes on those submirrors (downstream mirrors) (col 5, lines 36-40). This is achieved by updating mirrored volumes on submirrors with a “master” filer for a volume which is the most upstream filer (col 5, lines 16-20). Deleting a snapshot from the master renders later comparisons for mirroring from the master filer impossible. For a filer to mirror a volume to another volume, all but the master filer must use existing snapshots to determine the differences that need to be transferred downstream to update a mirror of a volume on a downstream filer.

Federwisch goes on to state at column 5, lines 54-60:

In a preferred embodiment, each filer maintains soft locks that indicate what snapshots on the filer correspond to volumes mirrored to downstream filers. Alternatively, each filer can include soft locks only about what volumes are mirrored to immediately adjacent filers (emphasis added).

Thus, Federwisch uses soft locks to determine which snapshots, either with downstream or alternatively only to filers downstream and immediately adjacent, must be retained in order to maintain an updated mirrored volume on submirrors. Federwisch is silent as to sending soft locks upstream regardless of whether or not a filer is adjacent.

Applicant respectfully urges that Federwisch does not show Applicant’s claimed novel *sending the created soft locks to the upstream storage system; and performing an*

asynchronous mirroring process to mirror local data to the downstream storage system.

Applicant discloses the ability, not only to send soft locks to a downstream storage system, but also to an *upstream storage system*. Federwisch is totally silent to *sending the created soft locks to the upstream storage system* and further teaches away from this concept as Federwisch's preferred embodiment contains each filer maintaining soft locks that indicate what snapshots on the filer correspond to volumes mirrored to downstream filers, and alternatively, each filer can include soft locks only about what volumes are mirrored downstream to immediately adjacent filers (col 5, lines 54-60). Thus, Federwisch only teaches sending soft locks downstream and downstream to immediately adjacent filers, whereas Applicant's claimed invention may send *the created soft locks to the upstream storage system*.

Accordingly, Applicant respectfully urges that the Federwisch patent is legally precluded from anticipating the claimed invention under 35 U.S.C. § 102 because of the absence from the Federwisch patent of Applicant's claimed novel use of *sending the created soft locks to the upstream storage system; and performing an asynchronous mirroring process to mirror local data to the downstream storage system..*

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

Favorable action is respectfully solicited.

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Respectfully submitted,

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